

**Feedback Control of a Chemical Mechanical Polishing Device
Providing Manipulation of Removal Rate Profiles**

Inventors: Arulkumar Shanmugasundram, Alexander T. Schwarm,
Gopalakrisna B. Prabhu

5

Abstract of the Disclosure

A method of controlling surface non-uniformity of a wafer in a polishing operation includes (a) providing a model for a wafer polishing that defines a plurality of regions on a wafer and identifies a wafer material removal rate in a polishing step of a polishing process
10 for each of the regions, wherein the polishing process comprises a plurality of polishing steps, (b) polishing a wafer using a first polishing recipe based upon an incoming wafer thickness profile, (c) determining a wafer thickness profile for the post-polished wafer of step (b), and (d) calculating an updated polishing recipe based upon the wafer thickness profile of step (c) and the model of step (a) to maintain a target wafer thickness profile. The model can
15 information about the tool state to improve the model quality. The method can be used to provide feedback to a plurality of platen stations.